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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/609,470

07/01/2003

Atsushi Yasuno

03500.017390.

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7590

06/16/2008

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EXAMINER

STOUFFER, KELLY M

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

06/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/609,470	Applicant(s) YASUNO, ATSUSHI	
	Examiner KELLY STOUFFER	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments filed 3 April 2008 have been fully considered but they are not persuasive. The applicant argues that Moleshi uses a plurality of discharge means in its invention and not two RF electrodes attached to a power source claimed. While it is true that in some instances Moleshi does use different discharge means throughout the document, Moleshi also discloses the use of RF power sources in addition to the chuck that acts as an electrode attached to an RF power source (column 13 lines 7-17), the microwave cavities of the invention (of which there are two or more) may also be RF induction discharge tubes, also RF energy sources which by definition are known to come from electrodes attached to RF energy sources (see column 13 lines 55-60 and column 14 lines 30-40). In addition, it would be obvious to include at least two RF energy sources, as different powers of RF energy perform different functions in Moleshi (see column 15 lines 27-67).

Further, because the rejection of the claims is under Moleshi in view of Chan, Chan teaches a plurality of RF sources, or electrodes, that are attached to the RF power source and matching network as partially described in the abstract and shown in the figures of Chan. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The applicant argues that Chan uses different plasmas to form different layers, not plural electrodes to form the same layer. One cannot show nonobviousness by

attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, the claim does not teach the same layers. The claim teaches the same film, which one of ordinary skill would realize can be made up of different layers.

Additionally, the applicant argues that Moleshi or Chen does not teach the specifics of the applicants' process. However, as stated before in previous office actions, Moleshi and Chen do teach the steps as claimed. It seems that the applicant is arguing for limitations not present in the claims but present in the disclosure, especially when suggesting that Moleshi did not solve the problem of the applicant's disclosure. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, for at least these reasons, the rejections of the previous office action are maintained and repeated here.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moleshi (US 5273609) in view of Chan (US 5653811).

Regarding claims 1-4, Moleshi includes a film formation process for controlling film formation temperature to overcome thermal stress limitations (column 1 lines 49-55 and column 6 lines 3-21) in which a source gas is fed into a discharge space of a reactor and electric power is applied to generate discharge in the discharge space to decompose the source gas, forming a deposited film on a substrate by switching electric power between a first and second discharge means to form a film with semiconductor layers of the same conductivity (columns 7-8 and 10-11 et seq.) The multi-switch processing apparatus of Moleshi is based upon energy sources (column 8 lines 1-10), and the process activation switch for the switching discharge means may be substrate temperature (column 8 lines 19-25) that operates with a preset temperature at its 'on' state and turns 'off' and switches at a predetermined energy level, or above a preset temperature (column 8 lines 30-55). Clearly Moleshi indicated in these passages that the substrate temperature is increased after exposure to the substrate plasma/various treatments. Moleshi also discloses the use of RF power sources in addition to the

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chuck that acts as an electrode attached to an RF power source (column 13 lines 7-17), the microwave cavities of the invention (of which there are two or more) may also be RF induction discharge tubes, also RF energy sources which by definition are known to come from electrodes attached to RF energy sources (see column 13 lines 55-60 and column 14 lines 30-40). In addition, it would be obvious to include at least two RF energy sources, as different powers of RF energy perform different functions in Moleshi (see column 15 lines 27-67). Various plasmas, as in first and second plasmas, are shown in Moleshi in Figures 6 and 7 as well as Chan as discussed below. Moleshi does not include using a device that has capabilities for moving the substrate through the reactor during film formation to be coated by discharge means disposed within the reactor. Chan teaches using a device that has capabilities for moving the substrate through the reactor during film formation to be coated by discharge means disposed within the reactor in order to sequentially treat more than one substrate and use a plasma source attached to the reactor the produced plasmas from specific gases (column 4 lines 8-31 and Figures 5 and 6). Chan shows two different plasmas from two different sources in Figure 6. Additionally, Chan teaches the plasma sources of its disclosed invention may be used to make plasmas of any size (column 1 lines 40-60). It is therefore obvious that one of ordinary skill in the art could easily apply this invention to a wafer that is belt shaped, as it would be functionally equivalent in Chan and could be used for other, larger applications such as windows. Additionally, it is obvious that since the substrate is moving, any subsequent step after the first in Chan would be performed on a different position of the deposited film. Chan also teaches a plurality of

RF sources, or electrodes, that are attached to the RF power source and matching network as partially described in the abstract and shown in the figures of Chan.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moleshi to include using a device that has capabilities for moving the substrate through the reactor during film formation to be coated by discharge means disposed within the reactor as taught by Chan in order to sequentially treat more than one substrate and use a plasma source attached to the reactor the produced plasmas from specific gases. The plasma sources are clearly opposite the substrate in the Figures of both Moleshi and Chan.

Regarding claims 5-12, the process of Moleshi uses multiple plasma sources and senses multiple conditions such as temperature, time, voltage, and current which activate switches that turn the plasma source from one to the other (column 4 lines 5-43, column 8 lines 10 – column 12 line 36, and Figure 2).

Regarding claim 14, Chan discloses that distances between sources depend upon the shape and uniformity of the desired plasma (column 3 lines 19-32 and column 4 lines 1-7). Chan additionally teaches that chamber pressure affects power to the plasma sources and plasma density. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Moleshi and Chan to include the claimed ranges of source distance and pressure, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art absent evidence

showing criticality for the claimed ranges. *In re Aller*, 220 F.2d 454, 105 USPQ 223 (CCPA 1955).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KELLY STOUFFER whose telephone number is (571)272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer
Examiner
Art Unit 1792

kms

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792